

AMENDMENT TO THE CLAIMS

1. (Previously Presented) An assembly comprising:  
at least one disc;  
a spindle assembly rotationally supporting the at least one disc to form a flow field along a surface of the at least one disc via rotation of the at least one disc;  
a head assembly positionable proximate to the surface of the at least one disc; and  
a flow controller supported in the flow field along the disc surface and the flow controller including a flow gate having a leading edge having a plurality of rows of radially spaced inlets and a trailing edge including a plurality of rows of radially spaced outlets and the flow gate including a plurality of rows of radially spaced streamline flow passages between the plurality of rows of inlets at the leading edge and the plurality of rows of radially spaced outlets at the trailing edge.
2. (Withdrawn) The assembly of claim 1 wherein the flow gate is supported upstream of flow of the flow field to the head assembly.
3. (Withdrawn) The assembly of claim 1 wherein the flow gate is supported downstream of flow of the flow field from the head assembly.
4. (Withdrawn) The assembly of claim 1 wherein the flow controller includes a plurality of flow gates supported in the flow field along the disc surface of the at least one disc.
5. (Withdrawn) The assembly of claim 4 wherein the plurality of flow gates includes an inflow gate to condition flow to the head

assembly and an outflow gate to condition flow excited by the head assembly.

6.(Previously Presented) The assembly of claim 17 wherein the plurality of streamline flow passages include circumferential radially spaced flow passages.

7.(Previously Presented) The assembly of claim 6 wherein the circumferential radially spaced flow passages are formed of a plurality of radially spaced circumferential fins supported relative to the at least one disc.

8.(Withdrawn) The assembly of claim 1 wherein the flow controller includes a honeycomb structure forming the plurality of rows of radially spaced streamline flow passages.

9.(Previously Presented) The assembly of claim 1 wherein the flow gate includes a block structure including the leading edge and the trailing edge having the plurality of rows of radially spaced inlets formed along the leading edge of the block and the plurality of rows of radially spaced outlets formed along the trailing edge of the block and the plurality of rows of radially spaced streamline flow passages therebetween.

10.(Withdrawn) The assembly of claim 1 wherein the flow controller includes an array of tubes forming the plurality of rows of radially spaced streamline flow passages.

11.(Previously Presented) The assembly of claim 1 wherein the head assembly is pivotally supported to move between an inner position and an outer position and a width of the flow gate extends between the inner and outer positions of the head assembly to condition flow to the head assembly.

12.(Withdrawn) The assembly of claim 1 wherein the spindle assembly supports a plurality of discs spaced to form a gap therebetween and the flow gate is supported in the gap between the plurality of discs.

13.(Withdrawn) The assembly of claim 12 wherein the flow controller includes a plurality of flow gates supported relative to the plurality of discs and each of the plurality of flow gates includes the plurality of rows of radially spaced streamline flow passages.

14.(Previously Presented) A flow control assembly comprising:  
a disc rotatable relative to a spindle axis to form a flow field along a surface of the disc; and  
a flow controller supported in the flow field along the disc surface and the flow controller including a leading edge having a plurality of radially spaced inlets and a trailing edge including a plurality of radially spaced outlets and including a plurality of radially spaced streamline flow passages and the plurality of radially spaced streamline flow passages are curved between the plurality of radially spaced inlets and the plurality of radially spaced outlets of the flow passages to redirect the flow field.

15.(Withdrawn) The assembly of claim 14 wherein the plurality of radially spaced streamline flow passages are angled to direct the flow field inwardly toward an inner diameter of the disc.

16. (Withdrawn) The assembly of claim 14 wherein the plurality of radially spaced streamline flow passages are angled to direct the flow field outwardly toward an outer diameter of the disc.

17. (Currently Amended) An assembly comprising:

at least one disc rotatable about a spindle axis and forming a flow field along a surface of the at least one disc and a head assembly supported relative to the surface of the at least one disc ; and

a flow device in the flow field for reducing turbulent flow along the surface of the at least one disc including a plurality of radially spaced streamline flow passages having a curved or arched contour.

18. (Canceled)

19. (Previously Presented) The assembly of claim 17 wherein the flow device is supported upstream of flow of the flow field to the head assembly.

20. (Previously Presented) The assembly of claim 17 wherein the flow device is supported downstream of flow of the flow field from the head assembly.

21. (Canceled)

22. (Canceled)

23. (Previously Presented) In combination;

a spindle assembly including a plurality of stacked discs rotatable to induce a flow field along a surface of each of the plurality of stacked discs by rotation of the plurality of stacked discs; and

a plurality of spaced flow devices supported in the flow field of the plurality of discs and the plurality of flow devices including adjacent flow devices and the adjacent flow devices including a leading edge and a trailing edge and including a plurality of radially spaced streamline flow passages between a plurality of inlets at the leading edge and a plurality of outlets at the trailing edge of adjacent flow devices.

24. (Previously Presented) The combination of claim 23 wherein the plurality of radially spaced streamline flow passages of the plurality of flow devices include a plurality of opened channels between opposed side edges of the plurality of streamline flow passages along a length of the streamline flow passages between the leading edge and the trailing edge thereof.

25. (Previously Presented) The combination of claim 23 and further comprising:

a head assembly supporting heads relative to the surfaces of the plurality of discs and the plurality of flow devices include a flow gate supported upstream of flow of the flow field to the head assembly.

26. (Previously Presented) The combination of claim 23 and further comprising:

a head assembly supporting heads relative to the surfaces of the plurality of discs and the plurality of flow devices include a flow gate supported downstream of flow of the flow field from the head assembly.

27. (Previously Presented) The combination of claim 23 wherein the plurality of radially spaced streamline flow passages include a plurality of radially spaced circumferential flow passages.

28. (Previously Presented) The combination of claim 23 wherein the radially spaced streamline flow passages are contoured to redirect the flow field.

29. (Previously Presented) The assembly of claim 1 wherein the plurality of rows of radially spaced streamline flow passages include a constant cross-sectional area or dimension between the plurality of inlets and the plurality of outlets.

30. (Previously Presented) The assembly of claim 1 wherein the flow gate is positioned between an inner diameter and outer diameter of the at least one disc.

31. (Currently Amended) The ~~assembly~~combination of claim 23 wherein the plurality of flow devices includes a flow device for each of the plurality of discs of the spindle assembly and each of the plurality of flow devices includes the plurality of radially spaced streamline flow passages.

32. (New) A flow controller to control flow in a flow field along a disc surface of a data storage device comprising:

a flow gate having a leading edge having a plurality of rows of radially spaced inlets and a trailing edge including a plurality of rows of radially spaced outlets and the flow gate including a plurality of rows of radially spaced streamline flow passages between the plurality of rows of inlets at the leading edge and the plurality of rows of radially spaced outlets at the trailing edge.